WHAT IS CLAIMED IS:

1. A process for the preparation of an electrochemical device composed of a polyether/lithium salt electrolyte film between two films respectively constituting the positive electrode and the negative electrode, consisting in assembling a multilayer structure comprising a current-collecting support, a film intended to form the positive electrode, a polyether film intended to form the electrolyte and a film intended to form the negative electrode, characterized in that:

- the film intended to form the positive electrode and/or the film intended to form the negative electrode are composed of a composite material comprising the lithium salt;
- the polyether film intended to form the electrolyte does not comprise lithium salt;
- the assembled device is left at rest for a time sufficient to allow the lithium salt present in the material of the positive electrode and/or in the material of the negative electrode to diffuse into the polymer film.

2. The process as claimed in claim 1, characterized in that the films respectively constituting the negative electrode, the positive electrode and the electrolyte have thicknesses of between 10 μm and 150 μm.

3. The process as claimed in claim 1, characterized in that the polyether is chosen from the copolymers which are obtained from ethylene oxide and from at least one substituted oxirane and which comprise at least 70% of $-CH_2-CH_2O-$ repeat units derived from ethylene oxide.

4. The process as claimed in claim 3, characterized in that the polyether comprises $-O-CH_2-CHR-$ units (derived from an oxirane $\overline{CH_2 - CHR - O}$) in which R is an alkyl radical.

5. The process as claimed in claim 4, characterized in that R is an alkyl radical having from 1 to 16 carbon atoms.

6. The process as claimed in claim 3, characterized in that the polyether comprises -O-CH_2CHR'- units (derived from an oxirane $\overline{CH_2\text{-}CHR'\text{—}O}$) in which R' is a group capable of polymerizing by the radical route.

7. The process as claimed in claim 6, characterized in that said group capable of polymerizing by the radical route is chosen from those which comprise a vinyl, allyl, vinylbenzyl or acryloyl group.

8. The process as claimed in claim 3, characterized in that the polyether comprises repeat units derived from several substituted oxiranes.

9. The process as claimed in claim 1, characterized in that the composite material of the film intended to form the positive electrode comprises an active material, a binder, a material conferring electronic conductivity and the lithium salt.

10. The process as claimed in claim 9, characterized in that the positive electrode active material is chosen from $Li_{1+x}V_3O_8$, $0<x<4$, $Li_xV_2O_5 \cdot nH_2O$, ($0<x<3$, $0<n<2$), $LiFePO_4$, hydrated or anhydrous iron phosphates and sulfates, hydrated or anhydrous vanadyl phosphates and sulfates, $LiMn_2O_4$, the compounds derived from $LiMn_2O_4$ obtained by partial substitution of Mn by Al, Ni and/or Co, $LiMnO_2$, the compounds derived from $LiMnO_2$ obtained by partial substitution of Mn by Al, Ni and/or Co, $LiCoO_2$, the compounds derived from $LiCoO_2$ obtained by partial substitution of Li by Al, Ti, Mg, Ni and/or Mn, $LiNiO_2$ and the compounds derived from $LiNiO_2$ obtained by partial substitution of Ni by Al, Ti, Mg and/or Mn.

11. The process as claimed in claim 1, characterized in that the film constituting the negative electrode is a lithium film.

12. The process as claimed in claim 1, characterized in that the film intended to form the negative electrode is composed of a composite material which comprises an active material, a binder, a material conferring electronic conductivity and the lithium salt.

13. The process as claimed in claim 12, characterized in that the active material is chosen from:

- carbon compounds,
- alloys with lithium of Li_xM type (M=Sn, Sb, Si) (obtained from SnO, from SnO_2, from Sn, Sn-Fe(-C) compounds, from Si compounds, from Sb compounds), or
- $Li_xCu_6Sn_5$ ($0<x<13$) compounds, iron borates, pnictides, simple oxides possessing reversible decomposition and insertion oxides, such as titanates, MoO_3 or WO_3.

14. The process as claimed in one of claims 1, 9 and 12, characterized in that the lithium salt is chosen from $LiPF_6$, $LiAsF_6$, $LiClO_4$, $LiBF_4$, LiC_4BO_8, $Li(C_2F_5SO_2)_2N$, $Li[(C_2F_5)_3PF_3]$, $LiCF_3SO_3$, $LiCH_3SO_3$ and $LiN(SO_2CF_3)_2$.

15. The process as claimed in either of claims 9 and 12, characterized in that the binder is composed either of a nonsolvating polymer and at least one polar aprotic compound, or of a solvating polymer.

16. The process as claimed in claim 15, characterized in that the polar aprotic compound is chosen from linear or cyclic carbonates, linear or cyclic ethers, linear or cyclic esters, linear or cyclic sulfones, sulfamides and nitriles.

17. The process as claimed in claim 15, characterized in that the nonsolvating polymer is chosen from:

- vinylidene fluoride homopolymers and copolymers,
- copolymers of ethylene, of propylene and of a diene,
- tetrafluoroethylene homopolymers and copolymers,
- N-vinylpyrrolidone homopolymers and copolymers,
- acrylonitrile homopolymers and copolymers,
- methacrylonitrile homopolymers and copolymers.

18. The process as claimed in claim 15, characterized in that the nonsolvating polymer carries ionic functional groups.

19. The process as claimed in claim 15, characterized in that the binder is a solvating polymer chosen from polyethers of linear, comb or block structure, forming or not forming a network, based on poly(ethylene oxide); copolymers comprising the ethylene oxide or propylene oxide

or allyl glycidyl ether unit; polyphosphazenes; crosslinked networks based on polyethylene glycol crosslinked by isocyanates; copolymers of oxyethylene and of epichlorohydrin; and networks obtained by polycondensation which carry groups which make possible the incorporation of crosslinkable groups.

20. The process as claimed in either one of claims 9 and 12, characterized in that the compound conferring electronic conduction properties is preferably a carbon black which does not catalyze the oxidation of the electrolyte at high potential.

21. The process as claimed in either one of claims 9 and 12, characterized in that the composite material additionally comprises a nonvolatile liquid organic solvent.

22. The process as claimed in claim 21, characterized in that said liquid solvent is chosen from:

- polar aprotic compounds, such as linear or cyclic carbonates, linear or cyclic ethers, linear or cyclic esters, linear or cyclic sulfones, sulfamides and nitriles,
- phthalates, such as dioctyl phthalate, dibutyl phthalate and dimethyl phthalate,
- a polyethylene glycol or poly(ethylene glycol) dimethyl ether of low mass.

23. The process as claimed in claim 1, characterized in that the polyether of the film intended to form the electrolyte is a copolymer comprising crosslinkable units and in that at least one of the electrodes is composed of a composite material which additionally comprises a crosslinking agent for said polyether.